



RHUMB LINES

Straight Lines to Navigate By



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Understanding the Navy's Tactical Energy Priorities

"Everything that we're doing is to make us better warfighters and to make us more secure as a Navy and a nation. Every time we make a change that improves the efficiency of our engines or our systems, every time we move to an alternate source of energy – every time – we become better, and we make people safer."

– Secretary of the Navy Ray Mabus

The Navy's energy program is primarily focused on enhancing the combat effectiveness of our warfighters, but it has the potential to lead energy change for our nation and the world. The Navy has spearheaded many [tactical and alternative energy initiatives](#) that are critical to reducing logistic vulnerabilities on the battlefield and enhancing sustainability of our naval mission. These initiatives are pointing the way to energy independence and security for all Americans in a perpetually challenging global energy landscape. Innovative technology and acquisition reform, coupled with energy [culture change](#), are the means by which the Navy is [decreasing consumption](#), [increasing efficiency](#), and diversifying its energy sources.

Increased Warfighting Readiness and Combat Capability

- Retrofits at sea, such as combustion trim loops, [gas turbine online water wash](#), and [stern flaps](#), are already reducing consumption and decreasing demand for fuel and its resultant logistics tethers – improving our range and endurance so our ships can remain on station.
- Along with other [initiatives](#) such as [solid-state lighting](#), [Smart Voyage Planning](#), and Energy Dashboard for bridge watch teams, these modifications will contribute to a lower energy profile for the Great Green Fleet, which will demonstrate off the coast of the U.S. in 2012 and deploy in 2016. The Great Green Fleet will consist of a nuclear-powered aircraft carrier, nuclear-powered submarine, conventional and hybrid electric ships "steaming" on diesel fuel marine biofuel, and aircraft operating on renewable jet biofuel.
- For naval boots-on-ground forces, technologies to improve energy management and storage, water purification, and renewable power are being tested to increase mission effectiveness in combat theaters of operation.
- In June, Assistant Secretary of the Navy for Research, Development, and Acquisition Sean Stackley signed a [memorandum](#) directing the Department of the Navy (DON) to consider energy as a performance factor when awarding contracts for new platforms. This led to a sea change in how we consider energy as a capability; the Navy Operational Energy in Acquisition Team now executes this memo.

Broadening Energy Alternatives Reduces One-Source Vulnerabilities

- To strengthen our energy security and transition from foreign fuel sources to domestic, the DON has successfully tested alternative fuels in many platforms, including the [F/A-18 Super Hornet](#), [MH-60S Seahawk](#), T-45 Training Aircraft, [MV-22 Osprey](#), [RCB-X](#), [EA-6B Prowler](#), MQ-8 Fire Scout, and [AV-8B Harrier](#).
- The Navy will complete the majority of its testing of hydrotreated renewable biofuel by the end of 2011. Certification will occur in 2012.
- The [Blue Angels](#) provided the highest profile demonstration of a Navy platform using biofuel when they performed at Naval Air Station Patuxent River's Air Expo 2011 in September.

Key Messages

- Energy conservation and efficiency increase combat range and endurance, making us better warfighters.
- Each unconsumed barrel of fuel or kilowatt-hour saves energy, money, and – on the battlefield – saves lives.
- Biofuels are about energy security. [Alternative fuels](#) that are equal in performance, domestically produced, and cost competitive are an 'off-ramp' from oil.

Facts & Figures

- The U.S. consumes 19 million barrels of petroleum per day; nearly one quarter comes from members of Organization of the Petroleum Exporting Countries.
- Nearly 50% of the Navy's fuel demand could be domestically produced using alternative fuels.
- For updated information on the Navy's energy program, visit <http://greenfleet.dodlive.mil/energy>.